

# **AIR FORCE QUALIFICATION TRAINING PACKAGE (AFQTP)**



for  
**LIQUID FUEL SYSTEMS MAINTENANCE  
(3E4X2)**

## **MODULE 9 AF OCCUPATIONAL SAFETY AND HEALTH (AFOSH) PROGRAM**

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Career Field Education and Training Plan (CFETP) references from 1 Apr 97 version.

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**Notice.** This AFQTP is NOT intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**AIR FORCE QUALIFICATION TRAINING PACKAGES**  
**for**  
**LIQUID FUEL SYSTEMS MAINTENANCE**  
**(3E4X2)**

**INTRODUCTION**

*Before starting this AFQTP*, refer to and read the “Trainee/Trainer Guide” located on the AFCESA Web site <http://www.afcesa.af.mil/>

*AFQTPs are mandatory and must be completed* to fulfill task knowledge requirements on core and diamond tasks for upgrade training. *It is important for the trainer and trainee to understand* that an AFQTP **does not** replace hands-on training, nor will completion of an AFQTP meet the requirement for core task certification. AFQTPs will be used in conjunction with applicable technical references and hands-on training.

*AFQTPs and Certification and Testing (CerTest) must be used as minimum upgrade requirements for Diamond tasks.*

**MANDATORY minimum upgrade requirements:**

***Core task:***

AFQTP completion  
Hands-on certification

***Diamond task:***

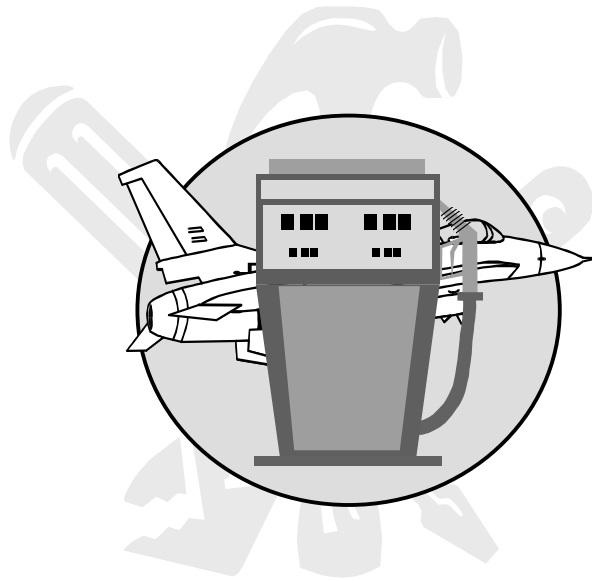
AFQTP completion  
CerTest completion (80% minimum to pass)

**Note:** *Trainees will receive hands-on certification training for Diamond Tasks when equipment becomes available either at home station or at a TDY location.*

***Put this package to use.*** Subject matter experts under the direction and guidance of HQ AFCESA/CEOT revised this AFQTP. If you have any recommendations for improving this document, please contact the Career Field Manager at the address below.

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## CONFINED SPACE ENTRY

**MODULE 9**

**AFQTP UNIT 6**

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**PERFORM CONFINED SPACE ENTRY (9.6.2.)**

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**PERFORM CONFINED SPACE ENTRY*****Task Training Guide***

<b>STS Reference Number/Title:</b>	9.6.2., Perform Confined Space Entry
<b>References:</b>	<ul style="list-style-type: none"> <li>• CDC 3E452</li> <li>• AFOSH STANDARD 91-25</li> </ul>
<b>Prerequisites:</b>	<ul style="list-style-type: none"> <li>• Possess as a minimum a 3E432 AFSC.</li> </ul>
<b>Equipment/Tools Required:</b>	<ul style="list-style-type: none"> <li>• Vapor / oxygen indicator</li> <li>• Personal protective equipment</li> <li>• Safety / Rescue equipment</li> </ul>
<b>Learning Objective:</b>	<ul style="list-style-type: none"> <li>• Fully understand all procedures, safeguards, and emergency egress and (or) rescue procedures associated with the entry</li> </ul>
<b>Samples of Behavior:</b>	<ul style="list-style-type: none"> <li>• Follow all safe work procedures required by supervisory personnel and SEG, CEF, and BES personnel.</li> <li>• Notify the entry supervisor when hazards exist that have not been corrected.</li> <li>• Notify the entry supervisor if they are ill or on medication of any type.</li> </ul>
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>• Follow all guidance established in the Master Entry Plan (MEP).</li> <li>• To successfully complete this element follow the steps outlined in the applicable technical manual exactly—no exceptions.</li> <li>• Any safety violation is an automatic failure.</li> </ul>	

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## PERFORM CONFINED SPACE ENTRY

**Background:** As an LFM worker you will be entering and working in a number of potentially serious hazardous locations. These may include atmospheric hazards such as lack of sufficient oxygen or the presence of flammable or explosive vapors. These hazards are not readily apparent, detectable by odor, or visible, which may result in workers entering confined spaces without consideration of the potential dangers. Because of this, workers must consider that all confined spaces contain unsafe conditions until all tests, evaluations, and prescribed requirements are performed to ensure safe conditions exist prior to entry.

A confined space is defined in AFOSH STD 91–25 as a space that:

- Is large enough and configured so that a worker can bodily enter and perform assigned work.
- Has limited or restricted means for entry or exit (for example: tanks, vessels, silos, storage bins, hoppers, vaults, manholes, and pits that may have limited means of entry).
- Is not designed for continuous human occupancy.

**Classification of confined spaces.** Confined spaces are classified on the basis of measurement of the oxygen content, flammability, and toxicity. The following table shows the classification of confined spaces based on atmospheric conditions.

Confined Space Classification — Atmospheric Conditions		
Parameter	Permit-required confined space	Non-permit confined space
<b>Characteristics</b>	**Immediately dangerous to life or health (IDLH). Potential for or has contained a hazardous atmosphere.	No hazardous atmosphere with no credible potential for a hazardous atmosphere, engulfment, or entrapment.
<b>Oxygen</b>	Less than 19.5% or greater than 23.5%	19.5 – 23.5%
<b>Flammability</b>	Greater than 10% LEL	Less than or equal to 10% LEL
<b>Toxicity</b>	An atmosphere concentration of any chemical substance over the occupational exposure limit (OEL) which is capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health affects.	An atmosphere concentration of any chemical substance regardless of OEL which is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health affects.

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Prior to entering a confined space containing a potentially hazardous environment, you must identify the nature of the hazard. Hazards may include, but are not limited to, oxygen deficiency, explosive atmosphere, engulfment, and physical hazards such as low ceilings, tripping hazards, slippery floors.

According to the hazards identified, refer to the Master Entry Plan (MEP) to determine the proper personal protective equipment, monitoring and rescue equipment. The MEP is part of the written confined space program. It serves as authorization for recurring entries and requirements for the entries. It is approved by the representatives of Base Safety, Bioenvironmental, and the Fire Department.

You must be prepared to exit from the confined space as rapidly as possible, whenever the order to evacuate is given, whenever monitoring alarm(s) are activated, or whenever you recognize the warning signs of exposure to substances whose presence in the confined space is known or expected. You must relay an alarm to the attendant immediately on becoming aware of the effects due to exposure.

***To perform the task, follow these steps:***

**Step 1: Identify Hazards.**

Before entering a confined space, ensure the space is a confined space according to the definitions listed above. Establish whether the space is permit required or non-permit required ( This information can be found in the MEP). Take atmospheric readings with a vapor / oxygen indicator ( Safe readings: <10% LEL, 19.5 – 23.5% Oxygen). Ensure vapor/oxygen indicator has been calibrated before use. Visually inspect the space for physical hazards, (for example, pipe locations, wet floors, and hanging objects).

**Step 2: Preparation for Entry.**

If it has been determined that a permit is required, follow the procedures established in the MEP to obtain a permit. Ensure area is properly ventilated. Assemble and inspect all personal protective/rescue equipment required by the MEP.

**Step 3: Entry.**

Reestablish location of physical hazards. Observe all safety precautions while performing tasks. Establish and maintain communications with personnel outside of the space.

**Step 4: Post Operations.**

Ensure permit has been properly completed and filed. met. Clean and inspect all personal protective/rescue equipment, then properly store.

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**Review Questions**  
**for**  
**Perform Confined Space Entry**

<b>Question</b>	<b>Answer</b>
1. What is the definition of a confined space?	a. A pit less than 5 feet in depth b. Not designed for human occupancy c. Any area that you have to enter
2. Which is the best source for Confined Space Entry information?	a. AFOSH STD 91-25 and Entry Permit b. AFOSH STD 91-25 and AFM 85-16 c. AFOSH STD 91-25 and Master Entry Plan
3. What percent LEL must you obtain to enter a confined space?	a. Less than 10% b. 19.5 – 23.5% c. Greater than 10%
4. What must you do prior to entry into a confined space?	a. Ventilate the space and enter b. Test and evaluate the atmospheric space c. Enter and test for hazardous conditions

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**PERFORM CONFINED SPACE ENTRY**

<b>Performance Checklist</b>		
<b>Step</b>	<b>Yes</b>	<b>No</b>
1. Did trainee identify the following hazards? a. LEL reading b. Oxygen reading c. Permit or Non-permit d. Physical Hazards		
2. Did trainee complete entry preparation? a. If permit required, was MEP followed? b. Was Personal protective/rescue equipment assembled and inspected?		
3. Did trainee enter confined space according to Standard? a. atmosphere properly monitored? b. Were Safety precautions observed? c. Was communication established?		
4. Did trainee complete post operations? a. Was permit completed and filed properly? b. Was protective/rescue gear cleaned, inspected, and properly stored?		
5. Did trainee demonstrate understanding of responsibilities as an entrant?		

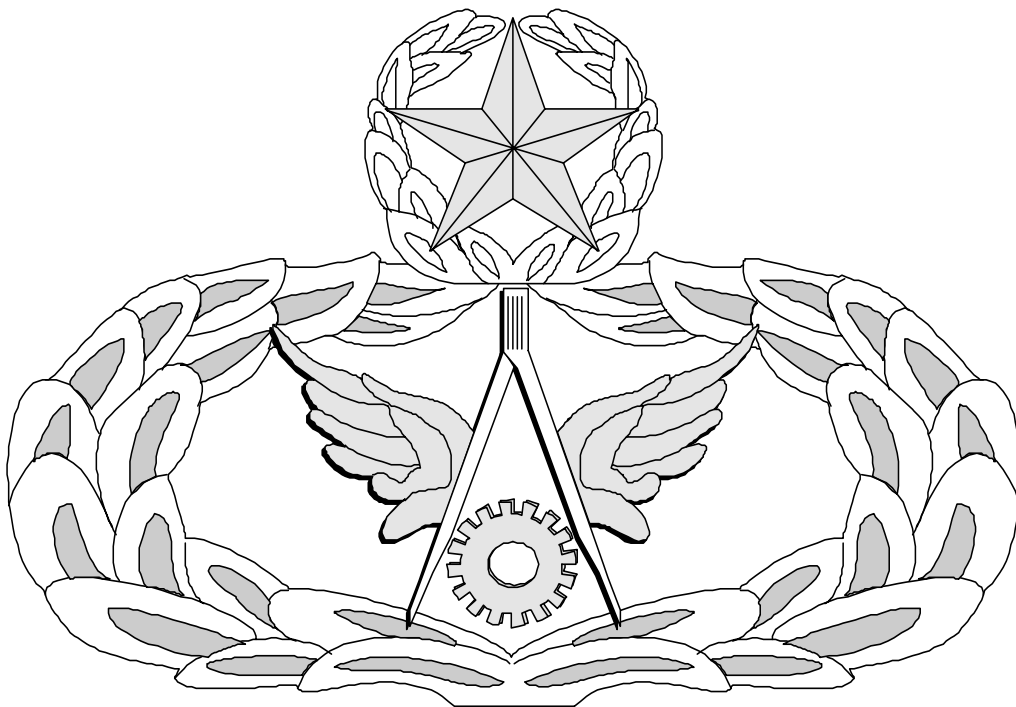
**FEEDBACK:** Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

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# **Air Force Civil Engineer**

## **QUALIFICATION TRAINING PACKAGE (QTP)**

### **REVIEW ANSWER KEY**



**For**  
**LIQUID FUEL SYSTEMS MAINTENANCE**

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**MODULE 9**

**AF OCCUPATIONAL SAFETY AND HEALTH (AFOSH)  
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**Key-1**

**PERFORM CONFINED SPACE ENTRY**

**(3E4X2-9.6.2)**

<b>Question</b>	<b>Answer</b>
1. What is the definition of a confined space?	b. Not designed for human occupancy
2. Which is the best source for Confined Space Entry information?	c. AFOSH STD 91-25 and Master Entry Plan
3. What percent LEL must you obtain to enter a confined space?	a. Less than 10%
4. What must you do prior to entry into a confined space?	b. Test and evaluate the atmospheric space

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